



## Figure 1

|     |      |             |             |            |            |          |     |           |   |    |
|-----|------|-------------|-------------|------------|------------|----------|-----|-----------|---|----|
| Gai | 0803 | .....MXRD   | HHHHHQQKKT  | MWMNEEDDGN | GMDLLAVLG  | YKVRSSSE | MAD | VAQKLEQLE | V | 54 |
|     |      | EAGGSSGGGS  | SADMGSCKDX  | VWAGAXGEEE | XVDELLAALG | YKVRSSD  | MAD | VAQKLEOLE | M | 60 |
| Gai | 0803 | AMSNVQBEDDL | SQLAETETVHY | NPAELYTWLD |            |          |     |           |   |    |
|     |      | AMGCGVTTP   | AORMTGSCRT  | WPRTKFI... |            |          |     |           |   |    |



Inventor: HARBERD et al  
SN 09/485,529/Sheet 2 of 22  
Atty. Dkt.: 620-91

Figure 2a

CCCCGACGGTTCGCGGCCGCGGCCAACGCGACGCCCGCGCTGCCGGTTCGTCTGTGG  
TCGACACGCAGGAGGCCGGGATTTCGGCTGGTGCACGCGCTGCTGGCGTGCGCGG  
AGGCCGTGCAGCAGGAGAACCTCTCCGCCGCGGAGGCGCTGGTGAAGCAGATAC  
CCTTGCTGGCCGCGTCCCAGGGCGGCGCGATGCGCAAGGTCGCCGCCTACTTTCGG  
CGAGGCCCTCGCCCCGCGCGTCTTCCGCTTCCGCCCGCAGCCGGACAGCTCCCTC  
CTCGACGCCGCCTTCGCCGACCTCCTCCACGCGCACTTCTACGAGTCCTGCCCCCTA  
CCTCAAGTTCGCGCACTTCACCGCCAACCAGGCCATCCTGGAGGCGTTTCGCCGGC  
TGCCGCCGCGTGCACGTCGTCGACTTCGGCATCAAGCAGGGGATGCAGTGGCCC  
GCACTTCTCCAGGCCCTCGCCCTCCGTCGCCGGCGGCCCTCCCTCGTTCCGCCTCAC  
CGGCGTCGGCCCCCGCAGCCGGACGAGACCGACGCCCTGCAGCAGGTGGGCTG  
GAAGCTCGCCCAGTTCGCGCACACCATCCGCGTCGACTTCCAGTACCGCGGCC  
TCGTCGCCGCCACGCTCGCGGACCTGGAGCCGTTTCATGCTGCAGCCGGAGGGCG  
AGGAGGACCCGAACGAAGANCCCCGANGTAATCGCCGTCAACTCAGTCTTCGAGA  
TGCACCGGCTGCTCGCGCAGCCCGGCGCCCTGGAAAAGGTTCTTGGGCACCGTGC  
GCCCCCGTGCGGCCAGAAATTCNTCACCCTGGTGGAAACAGGAGGCAAATCACA  
ACTCCGGCACATTCTGGACCGCTTCACCGAGTCTCTGCACTACTACTCCACCAT  
GTTTCGATTCCCTCGAGGGCGGCAGCTCCGGCGGGCGGCCCATCCGAAGTCTCATCG  
GGGGCTGCTGCTGCTCCTGCCGCCGCCGGCACGGACCAGGTCATNTCCGAGGTGT  
ACCTCGGCCGGCAGATCTGCAACGTGGTGGCCTGCGAGGGGGCGGAACGCACAG  
ANCGCCACGAGACGCTGGGCCAGTGGCGGAACCGGCTGGGCAACGCCGGGTTCG  
AGACCGTCCACCTGGGCTCCAATGCCTACAAGCAGGCGANACGCTGCTGGCGC  
TCTTCGCCGGCGGCGAACGGCTACANGTGAAGAAAAGGAAGGCTGCCTGACGC  
TGGGGTTGCACACNCCCCCTGATTGCCACCTCGGCATGGCGCCTGGCCGGGCCG  
TGATCTCGCGAGTTTTGAACGCTGTAAGTACACATCGTGAGCATGGAGGACAACA  
CAGCCCCGGCGGCCGCCCGGCTCTCCGGCGAACGCACGCACGCACGCACTTGA  
AGAAGAAGAAGCTAAATGTCATGTGAGTGAAGCGCTGAATTGCAGCGACCGGCTA  
CGATCGATCGGGCTACGGGTGGTTCCGTCCGTCTGGCGTGAAGAGGTGGATGGA  
CGACGAACTCCGAGCCGACCACCGGCATGTAGTAATGTAATCCCTTCTTCGT  
TCCCAGTTCCTCCACCGCCTCCATGATCACCCTGTAATACTCCTAAGCCCTATTATTA  
CTACTATTATGTTTAAATGTCTATTATTGCTATGTGTAATTCCTCCAACCGCTCAT  
ATCAAAATAAGCACGGGCCGGAAAAA  
AAAAA



Inventor: HARBERD et al  
SN 09/485,529/Sheet 3 of 22  
Atty. Dkt.: 620-91

### Figure 2b(1)

CGCGCAATGCTTAAGGTCNCCGCCTACTTCGGNGCAGGCCCTCGCCCCGCCGCGTC  
TTCCGCTTCCGCCCCGAGCCGGACAGCTCCCTCCTCGACGCCGCCTTCGCCGACCT  
CCTCCACGCGCACTTCTACNAGTCCTGCCCTACCTCAAGTTCGCGCACTTCACCG  
CCAATTAGGCCATCCTGGAGGCGTTCGCCGGCTGCCGCCGCGTGCACGTCGTCGA  
CTTCGGCATCAAGCAGGGGATGCAGTGGCCCCGCACTTCTCCAGGCCCTCGCCCTC  
CGTCCCGGCGGCCCTCCCTCGTTCGCTCACCGGCGTCGGCCCCCGCAGCCGG

### Figure 2b(2)

ACCTCCTTCGTCGTCTNTNNGGTGGGGGCGCCAGGAGCTTATGTGGTGGAGGNTG  
GCCCCNCCGGTCGCGACCGCGNCCTACGNGACGCCCGCGCTGCCGGTCGTCTGG  
TCGACACGCAGGAGGCCGGGATTTCGGNTGGTNCACGCGCTGCTGGNGTGCGNGG  
AGNCCGTGCAGCAGGAGAACCTCTCCGCCGCGGAGGCGCTNGTGAAGNAGATAC  
CCNTGCTGGCCGAGTCCCAGGGCGGCGAGATGNGCAAGGTNGCAGCTTACTTNG  
NAGANGCCCTCGCCCCGNGAGTGATTCCAATTANCGCCTGCAGCCGGANAGCTCC  
GTCCTCGAANCCGCNTTNGCCGACCTCCTCCACGNGCACNTNTACGAGTC

### Figure 2b(3)

TANTAGTCTCTCGGTGGGGGCGCCAGGAGCTCTNTGGTGGAGGCNGCCCCGCCG  
GTCGCGGCCGCGGCCAACGCGACGCCCGCGCTGCCGGTCGTCTGGTGCACACG  
CAGGAGGCCGGGATTTCGGATGGTGCACGCGCTGNTGGCGTGCGCGGAGGCCGTG  
AAACAGTTGAAGGNCCNCGCCTNNNNNCNCAANNTGAAAGCCCCGNG

### Figure 2b(4)

GGCTNCCNCCNCGTGCACGTCGTCGACTTCGGCATCAAGCATGGGATGCANTGGC  
NCGNACTTCTCCANGCCCTCGCCCTCCGTCCCGGCGGCCCTCCCTCGTTCCGCCTC  
ACCGGCGTCGGCCCCCGCAGCCGGACGAGACCGACGCCCTGCANCAGGTGGGC  
TGGAAGCTCGCCAGTTCGCGCACACCATCCGCGTCGACTTCCANTACCGTGGCC  
TCGTGCGCGCCACGCTCGCGGACCTGGAGCCGTTTCATGCTGCANCCGGAGGGCGA  
GGAGGACCCGAACGACGGAGCCCGAGGTAATCGCCGTCAACTCAGTCTTCGAGA  
TGCACCGGGCTGCTCNCGCANCCCGGCGACNCTGGAANAA



Inventor: HARBERD et al  
SN 09/485,529/Sheet 4 of 22  
Atty. Dkt.: 620-91

## Figure 2b(5)

CAAGANGCTAATCACAACCTCCGGCACATTCTGACCGCTTCACCGAGTCTCTGC  
ANTACTACTCCACCATGTTTCGATTCCCTCGAGGGCGGCAGCTCCGGCGGCGGCCCC  
ATCCGAAGTCTCATCGGGGGCTGCTGCTGCTCCTGCCGCCGCCGGCACGGACCAT  
GTCATGTCCGAXGTGTACCTCGGCCGGCAGATCTGCAACGTGGTGGCCTGCGAGG  
GGGCGGAGCGCACANTANCGCCACGCAGACNCTGGGCCAGTGGCGTGAACCGGC  
TGGGCAACGCCNGGTTCCANNNNCCGTCCACCTGGGCTCCAATGCCTACAATCAN  
GCNNNCACGCTGCTGGCGCCTCTTCGCCCC

## Figure 2b(6)

TCGCCANTCGGCATGGNGCCTGGCCGGGGCCGTGATCTCGCGAGTTTTGAACGCTG  
TAAGTACACATCGTGAGCATGGAGGACAACACAGCCCCGGCGGCCGCCCGGCT  
CTCCGGCGAACGCACGCACGCACGCACTTGGAAGAAGAANAAGCTAAATGTCAT  
GTCAGTGAGCGCTGAATTGCAACGACCGGCTACGATCGATCGGGCTACGGGTGG  
TTCCGTCCGTCTGGCGTGAAGAGGTGGATGGACGACGAACCTCCGANCCGACCAC  
CACCGGCATGTAGTAATGTAATCCCTTCTTCGTTCCAGTTCTCCACCGCCTCCAT  
GGATCACCCGTAAAACCTCCTAAGCCCTAATTATNNACTAACTAATTATGTTTTAA  
AATGTTCTAATTAATTGGCTATGTTGTAATNCCTCCAAACCGGCTCATTTTCAAA  
NATTAAGCCACGGGCCCGGAACCTTGGTTTAACAACCTCCCNATTGNAAAATTNA  
AATNGAAATTTTTGGTTNC

## Figure 2b(7)

GTTGGTGGNGGCGATTTGGGTACAAGGTGCGCGCCTCCGACATGGNNGGANGTGG  
GGCAGAAGCTGGAGCAGNTCGAGATGGCCATGGGGATGGGNGGCGTGGGCGCT  
GGCGCCGCCCTGACGACAGGTTNGCCACCCGCGNGGCCGCGGACACNGTGCANT  
ACAACCCACACNGACNTGTCGTCTTGGGTGAGAGCATGCTGTCGGAGCTAAANG  
AGCCGCGNGCCGCCCTCCCGCCCCGCCCCGCGAGCTCAACGCCTCCACCTCCTCCAC  
CGTCACGGGCAGCGGCGGCTACTTCGATAACCCTCCCTG

## Figure 2b(8)

TGATGGNNGGAGNTTANGGGTTANAAATGTGGGGGANTTCCGAANNNGGTGAGG  
ANATATNNTCAGAAGTTGGAGCAGATGAGAGATNGCTGATGGGGATAGGGTAGG  
NGTGGGTGCCGGTGCNGCCCCCNAGGANAGATTGGCCACCCACTTAGCAAGTGG  
ANACCGTGGATTACNACCCACAGACCTGTCGTGGTTGGGTTTGAGAGCGTGGTG  
TGGGAGCTGAACGGGCGNGCGGCGTGCCCCCTCCCGCCCCGCCCCGCGAGCTCAACGCC  
TCCACCTCCTCCACCGTACACGGGCAGCGGCGGCTAGTTCGATCTCCCGCCCTCC  
GTCGACTCCTCCAGCAGCATNTANGCGCTGCGGCCGATCCCTNCCCAAGCNNGC  
GNGGNCCGAGCCGTGTAN



Inventor: HARBERD et al  
SN 09/485,529/Sheet 5 of 22  
Atty. Dkt.: 620-91

## Figure 2b(9)

TTTCANTTTCNTCCTTTTTTCTTCTTTTTTCCAACCCCCGGCCCCCNGACCCTTGGAT  
CCAAATCCCGAACCCGCCCCAGAACCNNGGAACCGAGGCCAAGCAAAAGNTTTG  
CGCCAATTATTGGCCAGAGATAGATAGAGAGGCGAGGTAGCTCGCGGATCATGA  
AGCGGGAGTACCAGGACGCCGGAGGGAGCGGCGGCGGCGGTGGCGGCATGGGT  
TCGTCCGAGGACAAGATGATGGTGTTCGGCGGCGGCGGGGGAGGGGGAGGAGGT  
GGACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCGGA  
CGTGGCGCAGAAGCTGGAGCAGCTCGAGATGGCCATGGGGATGGGCGGCGTGGG  
CGCCGGCGCCGCCCCCGACGACAGCTTCGCCACCCACCTCGCCACGGACACCGTG  
CAGTACAACCNCCCNGACC

## Figure 2b(10)

GGACGACGACCTCCGAGCCGACCACCACCGGCATGTAGTAATGTAATCCCTTCTT  
CNTTCCCAGTNCTCCACCGCCTCCATGATCACCCGTAAAACTCCTAAGCCCTATT  
ATTACTACTATTATGTNTAANTGTCTATTATTGCTANGTGTAATTCCTCCAACCGC  
TCATATCAAAATAAGCACGGGCCGGACTIONTGTANAGCTCCAATGAGAAATGAA  
ATGAATTTTGTACGCAAGGCACGTCCAAAACTGGGCTGAGCTTTGTTCTGTTCTG  
TTATGTTTCATGGTGCTCACTGCTCTGATGAACATGATGGTGCCTCCAATGGTGGC  
TTTGCAATTGTTGAAACGTTTGGCTTGGGGGACTTGNGTGGGTGGGTGCATGGGG  
ATGAATATTACATCNCCGGATTAATAAGCCATCCCGTTGGCCGTCTTTGA  
ATANCTTGCCCNAAACGAAATTTCCCCCNATC

## Figure 2b(11)

AAANCCTANAANATATAGAGGCGATGTNGCNCCCCNATCANNAACNNGGATTACN  
GNAACNCCNGAAGGAGCGGCGGCGGCGGTGGCAGCATNGGCTCGTCCGATGACA  
AATATCATGGTGTCGGCGGCGGCGGGGACGGGGAGGAGGTGCACAACNTTTNG  
GCGGGACTCGNGTACCACGTGNACGGTGCCGCNCTNGNGGATNTGGCCCTNGAA  
GATGGGCCACCTCCAAA



Inventor: HARBERD et al  
SN 09/485,529/Sheet 6 of 22  
Atty. Dkt.: 620-91

## Figure 2b(12)

CGGCGGCCCCGTGGCGGCATGGGCTCGTCCGAGGACNAGATGATGGTGTGCGGCG  
GCGGCGGGGGANGGGGATGATGTGGACTATCTGCTGGCGGCGCTCGGGTACAAG  
GTGCGCGCCTCCGACAGGCGGAGCCCGCGCATAACTGGAGCCGCTCGAGATGGC  
CNTGGGGATNGGCGGCNTGGGCNCCNGCGCCTCCCCCG

## Figure 2b(13)

TGGNGCTCGGGTGNCCCGTGCGCGCCTCCGACATGGCGGGACGTGGCGCAGAAC  
TGGAGCAGCTCGAGATGGCCATGGGGATGGGCGGCGTGGGCGCCGGCGCCGCCC  
CCGACGACAGCTTCGCCACCCACCTCGCCACGGACACCGGCACACAACCCACCG  
ACCTGTCGTCTTGGGTCGAGAGCATGCTGTGCGGATCTCNACGCGCCNCCGNCGCC  
CCTCCCGCCCCG



Inventor: HARBERD et al  
SN 09/485,529/Sheet 7 of 22  
Atty. Dkt.: 620-91

### Figure 2c(1)

ANNTTGTNCNNNTACATCCCATGNGCCGCGCNATGCTNAAGGTCGCCGCCTACT  
TCGGCGCAGGCCCTCGCCCGCCGCGTCTTCCGCTTCCGCCCGCAGCCGGACAGCT  
CCCTCCTCGACGCCGCTTCGCCGACCTCCTCCACGCGCACTTCTACGAGTCCTGC  
CCCTACCTCAAGTTCGCGCACTTCACCGCCAACCAGGCCATCCTGGAGGCGTTTCG  
CCGGCTGCCGCCGCGTGCACGTCGTCGACTTCGGCATCAAGCAGGGGATGCAGT  
GGCCCGCACTTCTCCAGGCCCTCGCCCTCCGTCCCGGCGGCCCTCCCTCGTTCCGC  
CTCACCGGCGTTCGGCCCCCGCAGCCGGACGANAAACGACGCCCTG

### Figure 2c(2)

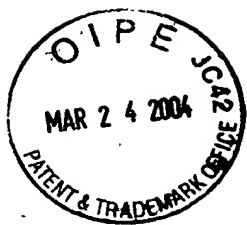
NTTCCCCGGCAGTTAAAAGCNTCCACTTCTTCCACCGTCACGGGCAGCGGCGGNT  
ACTTNGATCTCCCGCCCTCAGTCGACTCCTCCAGCAGCATCTACGCGCTGCGGCC  
GATCCCCTCCCCGGCCGGCGCGACGGCGCCGGCCGACCTGTCCGCCGACTCCGTG  
CGGGATCCCAAGCGGATGCGCACTGGCGGGAGCAGCACCTCGTCGTCATCCTCCT  
CATANTCGTCTCTCGGTGGGGGCGCCAGGAGCTCTGTGGTGGAGGCNGCCCCGCC  
GGTCGCGGCCGCGGCCAACGCGACGCCCGCGCTGCCGGTCGTCGTGGTTCGACAC  
GCAGGAGGCCGGGATTTCGGATGGTGCACGCGCTGNTGGCGTGCGCGGAGGCCGT  
GNAAGCAGTTNGAAGGGCCTNCGCCGTGNATNNCGAACAANNNGGAAGNCCN

### Figure 2c(3)

CANCCCGCTGNTCGCCACCTCGGCATGGCGCCTGGCCGGGCGGTGATCTCGCGAG  
TTTTGAACGCTGTAAGTACACATCGTGAGCATGGAGGACAACACAGCCCCGGCG  
GCCGCCCGGCTCTCCGGCGAACGCACGCACGCACGCACTTGAAGAAGAAGAAG  
CTAAATGTTCATGTTCAGTGAGCGCTGAATTGCANCGACCGGCTACGATCGATCGG  
GCTACGGGTGGTTCCGTCCGTCTGGCGTGAAGAGGTGGATGGACGACGAACCTCC  
GANCCGACCACCACCGGCATGTAGTAATGTAATCCCTTCTTCGTTCCCAGTTTCTC  
CACCGCCTCCATGATCACCCCGTAAAACTCCTAAGCCCTATNNNTTACTACNATT  
AATGTTTTAAANTGTTCTANTAATTGCTATGNTGTTTATTNCC

### Figure 2c(4)

TATCGAAGTAGCCGCCGCTGCCCNTGCACGGTGGAGGAGGTGGAGGCGTTGAGC  
TGCGGGGCGGGCGGGAGGGGCGGCGGCGGCACGTTNAGCTCCGACAGCATGCTC  
TCGACCCAAAACNACAGGTCCGTGGGGTTGTAGTGCACGGTGTCCGTGGCGAGG  
GGGTGGCNAANCTGTCGTCAGGGGCGGCGCCNGCGCCACNCCGCCCATCCCCA  
TGGCCATCTCGANCTGCTCCAGCTTCTGCGCCACTTCNCCATGTCNGATGCGCG  
CNCCTTGTACCCGA



Inventor: HARBERD et al  
SN 09/485,529/Sheet 8 of 22  
Atty. Dkt.: 620-91

## Figure 2c(5)

ACGGCGCGGNCCNCGCNGCTTGGGAGGGGATCGGCCGCAGCGCNTANATGCTG  
CTGGAGGAGTCGACGGAGGGCGGGAGATCGAACTAGCCGCCGCTGCCCGTGTAC  
GGTGGAGGAGGTGGAGGCGTTGAGCTGCGGGGCGGGCGGGAGGGGCAGCNGCT  
GCACGTTNAGCTCCACACACACGTCTCTCAACCCAACCACGACNCGTCTGTGGGG  
TNGTAATNCACGGTNTCCCTNGCTANGTGGGTGGCCAATCTNT

## Figure 2c(6)

CACGGTGTCCGTGGCGAGGTGGGTGGCGAAGCTGTCGTCGGGGGCGGGCGCCGGC  
GCCACGCCGCCCATCCCCATGGCCATCTCGAGCTGCTCCAGCTTCTGCGCCACG  
TCCGCCATGTCGGAGGCGCGCACCTTGTACCCGAGCGCCGCCAGCAGCNCGNCC  
ACCTCCTCCCCCTCCCCCGCCGCCGCGCCGACACCATCATCTTGTCTCGGACGANCC  
CATGCCGCCACCGCCGCCGCGCTCCCTCCGGCGTCCTGGTACTCCCGCTTCATG  
ATCCGCGAGCTACCTCGCCTCTCTATCTATCTCTGGCCAATAATTGCGCA

## Figure 2c(7)

GACCACCACCGGCATGTAGTAATGTAATCCCTTCTTCNTTCCCAGTTCTCCACCGC  
CTCCATGATCACCCGTAAACTCCTAAGCCCTATTATTACTACTATTATGTNTAA  
ATGTCTATTATTGCTANGTGTAATTCCTCCAACCGCTCATATCAAAATAAGCACG  
GGCCGGACTTTGTTAGCAGCTCCAATGAGAATGAAATGAATTTTGTACGCAAGGC  
ACGTCCAAACTGGGCTGAGCTTTGTTCTGTTCTGTTATGTTTCATGGTGCTCACTG  
CTCTGATGAACATGATGGTGCCTCCAATGGGTGGCTTTGCAATTGTTGAACGTTT  
TGGCTTGGGGGACTTGGTGNNTGGTGCATGGGAATGAANATTCCACATCCNCNG  
GAATTAAATTAGCCCATCCCCG





Inventor: HARBERD et al  
SN 09/485,529/Sheet 9 of 22  
Atty. Dkt.: 620-91

Figure 3a

TTTCANTTTCNTCCTTTTTTCTTCTTTTTTCCAACCCCGGCCCCCNGACCCTTGGATCC  
AAATCCCGAACCCGCCCCCAGAACCNGGAACCGAGGCCAAGCAAAAGNTTTGCGCC  
AATTATTGGCCAGAGATAGATAGAGAGGCGAGGTAGCTCGCGGATCATGAAGCGGG  
AGTACCAGGACGCCGGAGGGAGCGGCGGCGGCGGTGGCGGCATGGGTTCGTCCGAG  
GACAAGATGATGGTGTGCGGCGGCGGCGGGGAGGGGGAGGAGGTGGACGAGCTGC  
TGGCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCGGACGTGGCGCAGAAG  
CTGGAGCAGCTCGAGATGGCCATGGGGATGGGCGGCGTGGGCGCTGGCGCCGCCCC  
TGACGACAGGTTNGCCACCCGCNNGCCGCGGACACNGTGCANTACAACCCACNGA  
CNTGTCTGTCTTGGGTGAGAGCATGTCTGCGGAGCTAAANGAGCCGCNGCCGCCCC  
TCCCGCCCGCCCCGAGCTCAACGCCTCCACCGTCACGGGCAGCGGCGGNTACTTNG  
ATCTCCCGCCCTCAGTCGACTCCTCCAGCAGCATCTACGCGCTGCGGCCGATCCCCT  
CCCCGGCCGGCGCGACGGCGCCGGCCGACCTGTCCGCCGACTCCGTGCGGGATCCC  
AAGCGGATGCGCACTGGCGGGAGCAGCACCTCGTCGTCATCCTCCTCATANTCGTCT  
CTCGGTGGGGGCGCCAGGAGCTCTGTGGTGGAGGCGGCCCCGCCGGTTCGCGGCCGC  
GGCCAACGCGACGCCCGCGCTGCCGCTGCTCGTGGTTCGACACGCAGGAGGCCGGA  
TTCGGCTGGTGCACGCGCTGCTGGCGTGC GCGGAGGCCGTGCAGCAGGAGAACCTC  
TCCGCCGCGGAGGCGCTGGTGAAGCAGATACCCTTGCTGGCCGCGTCCCAGGGCGG  
CGCGATGCGCAAGGTGCGCGCCTACTTCGGCGAGGCCCTCGCCCGCCGCGTCTTCGG  
CTTCCGCCCCGACGCCGGACAGCTCCCTCCTCGACGCCGCTTCGCCGACCTCCTCCA  
CGCGCACTTCTACGAGTCTGCCCCCTACCTCAAGTTCGCGCACTTCACCGCCAACCA  
GGCCATCCTGGAGGCGTTCGCCGGCTGCCGCCGCGTGCACGTCGTCGACTTCGGCAT  
CAAGCAGGGGATGCAGTGGCCCGCACTTCTCCAGGCCCTCGCCCTCCGTCCCGGCCG  
CCCTCCCTCGTTCCGCCTCACCGGCGTTCGGCCCCCGCAGCCGGACGAGACCGACGC  
CCTGCAGCAGGTGGGCTGGAAGCTCGCCCACTTCGCGCACACCATCCGCGTCGACTT  
CCAGTACCGCGGCTCGTCGCCGCCACGCTCGCGGACCTGGAGCCGTTTCATGCTGCA  
GCCGGAGGGCGAGGAGGACCCGAACGAAGANCCCGANGTAATCGCCGTCAACTCA  
GTCTTCGAGATGCACCGGCTGCTCGCGCAGCCCGGCGCCCTGGAAAAGGTTCTTGGG  
CACCGTGCGCCCCCGTGC GGCCCAAGATTCTNTCACCCTGGTGGAAACAGGAGGCAA  
ATCACAACCTCCGGCACATTCCTGGACCGCTTCACCGAGTCTCTGCACTACTACTCCA  
CCATGTTCGATTCCCTCGAGGGCGGACGCTCCGGCGGCGGCCCATCCGAAGTCTCAT  
CGGGGGCTGCTGCTGCTCCTGCCGCCGCGGACGACCGAGGTTCATNTCCGAGGTGT  
ACCTCGGCGGCGAGATCTGCAACGTGGTGGCCTGCGAGGGGGCGGAACGCACAGAN  
CGCCACGAGACGCTGGGCCAGTGGCGGAACCGGCTGGGCAACGCCGGGTTCGAGAC  
CGTCCACCTGGGCTCCAATGCCTACAAGCAGGCGANACGCTGCTGGCGCTCTTCGC  
CGGCGGCGAACGGCTACANGTGAAGAAAAGGAAGGCTGCCTGACGCTGGGGTTGC  
ACACNCCCCCTGATTGCCACCTCGGCATGGCGCCTGGCCGGGCGGTGATCTCGCGA  
GTTTTGAACGCTGTAAGTACACATCGTGAGCATGGAGGACAACACAGCCCCGGCGG  
CCGCCCCGGCTCTCCGGCGAACGCACGCACGCACGCACTTGAAGAAGAAGAAGCTA  
AATGTCATGTGAGTGAAGCGCTGAATTGAGCGACCGGCTACGATCGATCGGGCTAC  
GGGTGGTTCCGTCCGTCTGGCGTGAAGAGGTGGATGGACGACGAACCTCCGAGCCGA  
CCACCACCGGCATGTAGTAATGTAATCCCTTCTTCGTTCCAGTTCTCCACCGCCTCC  
ATGATCACCCGTAAAACTCCTAAGCCCTATTATTACTACTATTATGTTTAAATGTCTA  
TTATTGCTATGTGTAATTCCTCCAACCGCTCATATCAAAATAAGCACGGGCCGGACT  
TTGTTANCAGCTCCAATGAGAATGAAATGAATTTTGTACGCAAGGCACGTCCAAAA  
CTGGGCTGAGCTTTGTTCTGTTCTGTTATGTTTCATGGTGCTCACTGCTCTGATGAACA  
TGATGGTGCCTCCAATGGTGGCTTTGCAATTGTTGAAACGTTTGGCTTGGGGGACTT  
NGTGGGTGGGTGCATGGGGATGAATATTCACATCNCCGGATTAAATTAAGCCAT  
CCCGTTGGCCGTCCTTTGAATANCTTGCCCNAAACGAAATTTCCCCCNATC

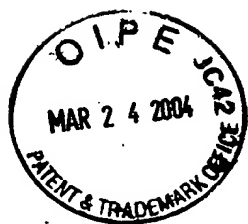


Inventor: HARBERD et al  
SN 09/485,529/Sheet 10 of 22  
Atty. Dkt.: 620-91

Figure 3b

PRETTYBOX of: My.Msf(\*) August 7, 1997 13:06:42.76

|            |                           |                           |                          |                           |                            |                          |            |
|------------|---------------------------|---------------------------|--------------------------|---------------------------|----------------------------|--------------------------|------------|
| Gai<br>Rht | .....M<br>IERRGSSRIM      | KRDH HHHHQ.<br>KREYQDAGGS | .....D<br>GGGGGGMGSE     | KRTMMMNNEED<br>DKMNVSAAG  | DNGMDELLA<br>EGEEVDELLA    | VLGYKVRSE<br>ALGYKVRASD  | 41<br>60   |
| Gai<br>Rht | MADVAKLEO<br>MADVAKLEO    | LEVMMMS<br>LEMAMGMGGV     | ...NVQEDD<br>GAGAAPDRQV  | LSQLATETVH<br>XHPXAADTVX  | YNPAELEYTML<br>YNPTDXSSMV  | DSMLTDLNPP<br>ESMLSELXEP | 93<br>120  |
| Gai<br>Rht | .....P<br>XPPLPPAPQL      | .....S<br>NASTVTGSGG      | YXDLPPSVDS               | SNAEYDLKAI<br>SSSIYALRPI  | PGDAIILNQFA<br>PSPAAGATAPA | IDSASSSNQ<br>DLSADSVRDP  | 123<br>180 |
| Gai<br>Rht | ...GGGGDT<br>KRMRTGGSST   | YTNKRLKCS<br>SSSSSSXSSL   | NG...VVE<br>GGGARSSVVE   | ...TTAT<br>AAPPVAAAN      | AESTRHVVLV<br>ATPALPVVVV   | DSQENGVRVLV<br>DTQEGIRLV | 169<br>240 |
| Gai<br>Rht | HALLACAEAV<br>HALLACAEAV  | QKENLTVAEA<br>QQENLSAAEA  | LVKQIGFLAV<br>LVKQIPLLA  | SOIGAMRKVA<br>SQGCAMRKVA  | TYFAEALARR<br>AYFGEALARR   | IYRLSPSQ<br>VFRFRPPDS    | 227<br>300 |
| Gai<br>Rht | SPIDHSLSDT<br>SLLDAAAFADL | LQMHEFETCP<br>LHAHFYESCP  | YLKFAHFTAN<br>YLKFAHFTAN | QAILLEAFQK<br>QAILLEAFAGC | KRVHVIDFSM<br>RRVHVVDDEGI  | SQGLQWPALM<br>KQGMQWPALL | 287<br>360 |
| Gai<br>Rht | QALALRPGGP<br>QALALRPGGP  | PVFRLTGIGP<br>PSFRLTGVGP  | PAPDNFDYLH<br>POPDETDAHQ | EVGCKLAHLA<br>QVGVKLAQFA  | EAIHVEFEYR<br>HTIRVDFQYR   | GFVANLTLADL<br>GLVATLADL | 347<br>420 |
| Gai<br>Rht | DASMLELRPS<br>EPFMLQPEGE  | EIES...V<br>EDPNEXPXVI    | AVNSVFELHK<br>AVNSVFEMHR | LLGRPGAIDK<br>LLAQPGALEK  | VLG.VVNQIK<br>VLGHRAPPCC   | PEIFTVVE.Q<br>PEFXTVVEQ  | 400<br>480 |
| Gai<br>Rht | ESNHNSPIFL<br>EANHNSGTFL  | DRFTESLHY<br>DRFTESLHY    | STLFDSLEGV<br>STMFDSLEG  | PSGQ...VS<br>SSGGGPSEVS   | ...SGAAAAPAA<br>GTQQVXSEVY | DKVMSEVY<br>GTQQVXSEVY   | 442<br>540 |
| Gai<br>Rht | LGRQICNVVA<br>LGRQICNVVA  | CDGPDRLVERH<br>CEGAERTXRH | ETLSQMRNRF<br>ETLGQMRNRL | GSAGFAAAHI<br>GNAGFETVHL  | GSNAFKQASM<br>GSNAYKQAXT   | LLALFNGGEG<br>LLALFAGGER | 502<br>600 |
| Gai<br>Rht | YRVEESDGCL<br>LXVEEKEGCL  | MLGWHTRPPLI<br>TLGLHTXPLI | ATSAWKLSTN<br>ATSAWRLAGP | 532<br>630                |                            |                          |            |



Inventor: HARBERD et al  
SN 09/485,529/Sheet 11 of 22  
Atty. Dkt.: 620-91

## Figure 4a

ACGCGTCCGGAAGCCGGCGGGAGCAGCGGCGGGCGGGAGCAGCGCCGATATGGG  
GTCGTGCAAGGACAAGGTGATGGCGGGGGCGGCGGGGGAGGAGGAGGACGTCT  
ACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGGTTCGTCCGACATGGCCGACG  
TCGCGCAGAANCTGGAGCAGCTGGAGATGGCCATGGGGATGGGCGGCGTGAGCG  
CCCCCGGCGCCGCGGATGACGGGTTCGTGTCGCACCTGGCCACGGACACCGTGC  
ACTACAACCCCTCGGACCTCTCCTCCTGGGTTCNGAGAGCATGCTTTCGGAGTTA  
AAGGCGCCGTTGCCCCCTTATCCCGCCAGGCGCCGCGGGCTGCCC GCCATGCTTT  
CCA ACTTCGTCCACTGTCACCGGCGGCGGTGGTAGCGGCTTCTTTGAANTCCCAG  
CCGCTGCCGANTCGTCGAGTAGCACNTACGCCCTCAGGCCGATCTCCTTACCGGT  
GGTGGCGACGGCTGACCCGTCGGCTGCTGACTCGGCGAGGGACACCAAGCGGAT  
GCGCACTGGCGGCGGCAGCACGTCGTCGTCCTCATCGTCGTCTTCCTCTCTGGGC  
GGTGGGGCCTCGCGGGGCTCTGTGGTGGAGGCTGCTCCGCCGGCGACGCAAGGG  
GCCGCGGCGGCGAATGCGCCCGCCGTGCCGTTGTGGTGGTTGACACGCAGGAG  
GCTGGNATCGGGCCTGGTGTC



Inventor: HARBERD et al  
SN 09/485,529/Sheet 12 of 22  
Atty. Dkt.: 620-91

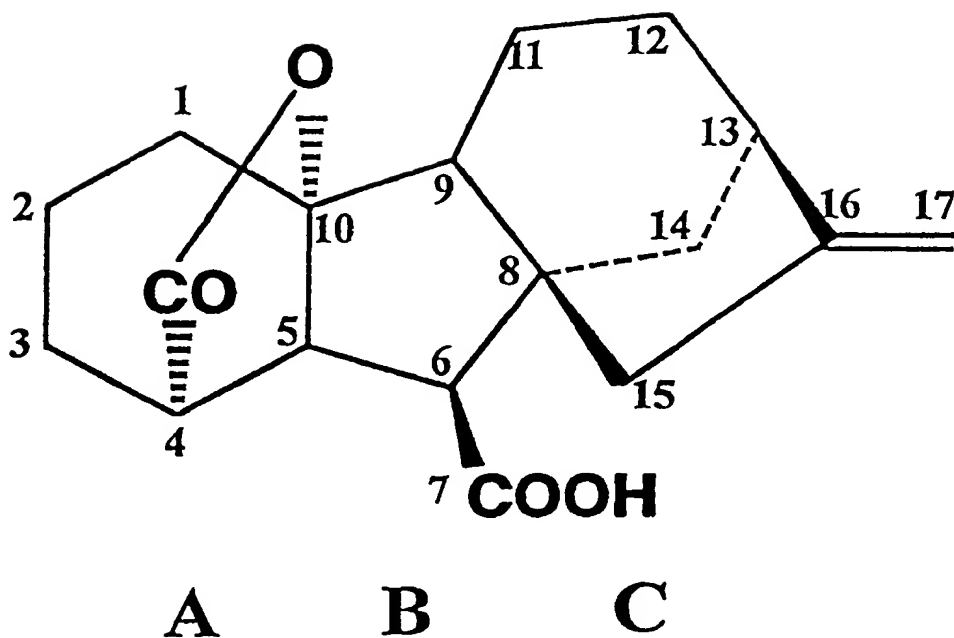
|                      |   |   |   |   |   |   |                   |
|----------------------|---|---|---|---|---|---|-------------------|
| Wheat<br>Rice<br>Gai | I E R R G S S R I M<br>T R P E A G G S S G<br>K R D H H H H Q D   | K R E Y Q D A G G S<br>T R P E A G G S S G<br>K R D H H H H Q D   | G G G G G G G S E<br>G G S S A D M G S C<br>G G G G G G G S E     | D K M M V S A A A G<br>K D X V M A G A A G<br>K K T M M M N E E D   | E G E E V D E L L A<br>E E E D V D E L L A<br>D G N G M D E L L A | A L G Y K V R A S D<br>A L G Y K V R S S D<br>V L G Y K V R S S E | 60<br>50<br>41    |
| Wheat<br>Rice<br>Gai | M A D V A O K L E Q<br>M A D V A O K L E Q<br>M A D V A O K L E Q | L E M A N G M G G V<br>L E M A N G M G G V<br>L E V M S           | G A G A A P D R Q V<br>S A P G A A D D G F<br>N V Q E D D         | X H P X A A A D T V X<br>V S H L A T D T V H<br>L S Q L A T E T V H | Y N P T D X S S W V<br>Y N P S D L S S W V<br>Y N P A E L Y T W L | E S N L S E L X E P<br>E S M L S E L K A P<br>D S M L T D L N P P | 120<br>110<br>93  |
| Wheat<br>Rice<br>Gai | X P P L P P A P Q<br>L P L I P P G A A G<br>L P A M L S P T S S   | L N A<br>L P A M L S P T S S<br>L P A M L S P T S S               | T V T G S G<br>T V T G G G S G F<br>T V T G G G S G F             | X D L P P S V D S S<br>F E X P A A A X S S<br>S S                   | S S I Y A L R P I P<br>S S T Y A L R P I S<br>N A E Y D L K A I P | S P A G A T A P A D<br>L P V V A T A D P S<br>G D A I L N         | 171<br>170<br>112 |
| Wheat<br>Rice<br>Gai | L S A D S V R D P K<br>A A D S A R D T K<br>F A I D S A           | R M R T G G S S T S<br>R M R T G G G S T S<br>S S S N Q G G G G   | S S S S S X S S L G<br>S S S S S S S S L G<br>S S S N Q G G G G   | G G A R S S S V V E<br>G G A S R G S V V E<br>D T Y T T N K R L K   | A A P P V A A A<br>A A P P A T Q G A A<br>C S N G V V E T T       | A N A T P A L P V V<br>A A N A P A V P V V<br>A T A E S T R H V V | 228<br>229<br>157 |
| Wheat<br>Rice<br>Gai | V V D T Q E E A G<br>V V D T Q E E A G<br>L V D S Q E E N G       | I R L V H A L L A C<br>I R L V H A L L A C<br>V R L V H A L L A C | A E A V Q Q E N L S<br>X E A V Q Q E N F<br>A E A V K E N L T     | A A E A L V K O I P<br>V A E A L V K O I G<br>V A E A L V K O I G   | L L A A S O G G A M<br>F L A V S O I G A M<br>F L A V S O I G A M | R K V A A Y F G E A<br>R K V A T Y F A E A<br>R K V A T Y F A E A | 286<br>258<br>215 |
| Wheat<br>Rice<br>Gai | L A R R V F R F R P<br>L A R R I Y R L S P<br>L A R R I Y R L S P | Q P D S S L L D A A<br>S Q S P I D H S<br>S Q S P I D H S         | F A D L L H A H F Y<br>L S D T L Q M H F Y<br>L S D T L Q M H F Y | E S C P Y L K F A H<br>E T C P Y L K F A H<br>E T C P Y L K F A H   | F T A N O A I L E A<br>F T A N O A I L E A<br>F T A N O A I L E A | F A G C R R V H V V<br>F Q G K K R V H V I<br>F Q G K K R V H V I | 346<br>258<br>273 |
| Wheat<br>Rice<br>Gai | D E G I K O G M O M<br>D E S M S O G L O W<br>D E S M S O G L O W | P A L L O A L A L R<br>P A L M O A L A L R<br>P A L M O A L A L R | P G G P P S F R L T<br>P G G P P V F R L T<br>P G G P P V F R L T | G V G P P Q P D E T<br>G I G P P A P D N F<br>G I G P P A P D N F   | D A L Q Q V G W K L<br>D Y L H E V G C K L<br>D Y L H E V G C K L | A Q F A H T I R V D<br>A H L A E A I H V E<br>A H L A E A I H V E | 406<br>258<br>333 |
| Wheat<br>Rice<br>Gai | F Q Y R G L V A A T<br>F E Y R G F V A N T<br>F E Y R G F V A N T | L A D L E P F M L Q<br>L A D L D A S M L E<br>L A D L D A S M L E | P E G E E D P N E X<br>L R P S E I E S<br>L R P S E I E S         | P X V I A V N S V F<br>V A V N S V F<br>V A V N S V F               | E M H R L L A Q P G<br>E L H K L L G R P G<br>E L H K L L G R P G | A L E K V L G H R A<br>A I D K V L G V V<br>A I D K V L G V V     | 466<br>258<br>387 |
| Wheat<br>Rice<br>Gai | P P C G P E F X T V<br>N Q I K P E I F T V<br>N Q I K P E I F T V | V E T Q E A N H N S<br>V E Q E S N H N S<br>V E Q E S N H N S     | G T F L D R F T E S<br>P I F L D R F T E S<br>P I F L D R F T E S | L H Y Y S T M F D S<br>L H Y Y S T L F D S<br>L H Y Y S T L F D S   | L E G G S S G G G P<br>L E G V P S G Q<br>L E G V P S G Q         | S E V S S G A A A A<br>S E V S S G A A A A<br>S E V S S G A A A A | 526<br>258<br>434 |
| Wheat<br>Rice<br>Gai | P A A A G T D Q V X<br>D K V M<br>D K V M                         | S E V Y L G R O I C<br>S E V Y L G K O I C<br>S E V Y L G K O I C | N V V A C E G A E R<br>N V V A C D G P D R<br>N V V A C D G P D R | T X R R H E T L G Q W<br>V E R H E T L S Q M<br>V E R H E T L S Q M | R N R L G N A G F E<br>R N R F G S A G F A<br>R N R F G S A G F A | T V H L G S N A Y K<br>A A H I G S N A F K<br>A A H I G S N A F K | 586<br>258<br>488 |
| Wheat<br>Rice<br>Gai | O A X T L L A L F A<br>O A S M L L A L F N<br>O A S M L L A L F N | G G E R L X V E E K<br>G G E Y R V E E S<br>G G E Y R V E E S     | E G C L T L G L H T<br>D G C L M L G W H T<br>D G C L M L G W H T | X P L I A T S A U R<br>R P L I A T S A N K<br>R P L I A T S A N K   | L A G P 630<br>L S T N 532<br>L S T N 532                         | L A G P 630<br>L S T N 532<br>L S T N 532                         |                   |

Figure 4b



Inventor: HARBERD et al  
SN 09/485,529/Sheet 13 of 22  
Atty. Dkt.: 620-91

Figure 5





Inventor: HARBERD et al  
SN 09/485,529/Sheet 14 of 22  
Atty. Dkt.: 620-91

Figure 6a

GTCGACCCACGCGTCCGGAAGCCGGCGGGAGCAGCGGCGGCGGGAGCAGCGCC  
GATATGGGGTTCGTGCAAGGACAAGGTGATGGCGGGGGCGGCGGGGGAGGAGGA  
GGACGTCGACGAGCTGCTGGCGGCGCTCGGGTACAAGGTGCGGTTCGTCCGACAT  
GGCCGACGTCGCGCAGAAAGCTGGAGCAGCTGGAGATGGCCATGGGGATGGGCGG  
CGTGAGCGCCCCCGGCGCCGCGGATGACGGGTTCGTGTCGCACCTGGCCACGGA  
CACCGTGCACTACAACCCCTCGGACCTCTCCTCCTGGGTCGAGAGCATGCTTTCC  
GAGCTCAACGCGCCGCTGCCCCCTATCCCGCCAGCGCCGCGGCTGCCCCCCATG  
CTTCCACCTCGTCCACTGTCACCGGCGGCGGTGGTAGCGGCTTCTTTGAACTCCC  
AGCCGCTGCCGACTCGTCGAGTAGCACCTACGCCCTCAGGCCGATCTCCTTACCG  
GTGGTGGCGACGGCTGACCCGTCGGCTGCTGACTCGGCGAGGGACACCAAGCGG  
ATGCGCACTGGCGGCGGCAGCACGTCGTCGTCCTCATCGTCGTCTTCTCTCTGG  
GCGGTGGGGCCTCGCGGGGCTCTGTGGTGGAGGCTGCTCCGCCGGCGACGCAAG  
GGGCCGCGGCGGCGAATGCGCCCGCCGTGCCGTTGTGGTGGTTGACACGCAGG  
AGGCTGGGATCCGGCTGGTGCACGCGTTGCTGGCGTGCGCGGAGGCCGTGCAGC  
AGGAGAACTTC

Figure 6b

RPTRPEAGGSSGGGSSADMGSCKDKVMAGAAGEEEDVDELLAALGYKVRSSDMAD  
VAQKLEQLEMAMGMGGVSAPGAADDGFVSHLATDTVHYNPSDLSSWVESMLSELN  
APLPIPPAPPAARHASTSSTVTGGGGSGFFELPAAADSSSSTYALRPISLPVVATADPS  
AADSARDTKRMRTGGGSTSSSSSSSSSLGGGASRGSVVEAAPPATQGAAAANAPAVP  
VVVVDTQEAGIRLVHALLACAEAVQQENF



Inventor: HARBERD et al  
SN 09/485,529/Sheet 15 of 22  
Atty. Dkt.: 620-91

Figure 7a

GCCAGGAGCTCTGTGGTGGAGGCTGCCCGCCGGTCGCGGCCCGCGGCCAACGCG  
ACGCCCCGCGCTGCCGGTCGTCGTGGTCGACACGCAGGAGGCCGGGATTCGGCTG  
GTGCACGCGCTGCTGGCGTGCGCGGAGGCCGTGCAGCAGGAGAACCTCTCCGCC  
GCGGAGGCGCTGGTGAAGCAGATACCCTTGCTGGCCGCGTCCCAGGGCGGCGCG  
ATGCGCAAGGTCGCCGCTACTTCGGCGAGGCCCTCGCCCCGCCGCGTCTTCCGCT  
TCCGCCCCGACGCCGACAGCTCCCTCCTCGACGCCGCTTCGCCGACCTCCTCCA  
CGCGCACTTCTACGAGTCCTGCCCTACCTCAAGTTCGCGCACTTCACCGCCAAC  
CAGGCCATCCTGGAGGCGTTCGCCGGCTGCCGCCGCGTGCACGTCGTCGACTTCG  
GCATCAAGCAGGGGATGCAGTGGCCCGCACTTCTCCAGGCCCTCGCCCTCCGTCC  
CGGCGGCCCTCCCTCGTTCCGCCCTACCGGCGTCCGCCCCCGCAGCCGGACGAG  
ACCGACGCCCTGCAGCAGGTGGGCTGGAAGCTCGCCCAGTTCGCGCACACCATC  
CGCGTCGACTTCCAGTACCGCGGCCTCGTCGCCGCCACGCTCGCGGACCTGGAGC  
CGTTCATGCTGCAGCCGGAGGGCGAGGAGGACCCGAACGAGGAGCCCCGAGGTAA  
TCGCCGTAACCTCAGTCTTCGAGATGCACCGGCTGCTCGCGCAGCCCCGGCGCCCT  
GGAGAAGGTCTTGGGCACCGTGCGCGCCGTGCCGCCAGGATCGTCACCGTGGT  
GGAGCAGGAGGCGAATCACAACCTCCGGCACATTCTTGACCGCTTCACCGAGTC  
TCTGCACTACTACTCCACCATGTTTCGATTCCCTCGAGGGCGGCAGCTCCGGCGGC  
GGCCCATCCGAAGTCTCATCGGGGGCTGCTGCTGCTCCTGCCGCCGCCGGCACGG  
ACCAGGTCATGTCCGAGGTGTACCTCGGCCGGCAGATCTGCAACGTGGTGGCCTG  
CGAGGGGGCGGAGCGCACAGAGCGCCACGAGACGCTGGGCCAGTGGCGGAACC  
GGCTGGGCAACGCCGGGTTCGAGACCGTCCACCTGGGCTCCAATGCCTACAAGC  
AGGCGAGCACGCTGCTGGCGCTCTTCGCCGGCGGCGACGGCTACAAGGTGGAGG  
AGAAGGAAGGCTGCCTGACGCTGGGGTGGCACACGCGCCCCGCTGATCGCCACCT  
CGGCATGGCGCCTGGCCGGGGCCGTGATCTCGCGAGTTTTGAACGCTGTAAGTACA  
CATCGTGAGCATGGAGGACAACACAGCCCCGGCGGCCGCCCGGCTCTCCGGCG  
AACGCACGCACGCACGCACTTGAAGAAGAAGAAGCTAAATGTCATGTCAGTGAG  
CGCTGAATTGCAGCGACCGGCTACGATCGATCGGGCTACGGGTGGTTCCGTCCGT  
CTGGCGTGAAAGAGGTGGATGGACGACGAACCTCCGAGCCGACCACCACCGGCATG  
TAGTAATGTAATCCCTTCTTCGTTCCAGTTCTCCACCGCCTCCATGATCACCCGT  
AAAACCTCCTAAGCCCTATTACTACTATTATGTTTAAATGTCTATTATTGCTAT  
GTGTAATTCTCCAACCGCTCATATCAAAATAAGCACGGGGCCGGAAAAAAAAAAAA  
AA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 7b

ARSSVVEAAPPVAAAANATPALPVVVVDTEAGIRLVHALLACAEAVQQENLSAAE  
ALVKQIPLLAASQGGAMRKVAA YFGEALARRVFRFRPQPDSSLLDAAFADLLHAHF  
YESCPYLKFAHFTANQAILEAFAGCRRVHVVDGFIKQGMQWPALLQALALRPGGPPS  
FRLTGVGPPQPDETDALQQVGWKLAFQAHTRVDFQYRGLVAATLADLEPFMLQPE  
GEEDPNEEPEVIAVNSVFEMHRLLAQPGALEKVLGTVRAVRPRIVTVVEQEANHNSG  
TFLDRFTESLHYYSTMFDSLEGGSSGGGPSEVSSGAAAAPAAAGTDQVMSEVYLGR  
QICNVVACEGAERTERHETLGQWRNRLGNAGFETVHLGSNAYKQASTLLALFAGGD  
GYKVEEKEGCLTLGWHTRPLIATSAWRLAGP



Inventor: HARBERD et al  
SN 09/485,529/Sheet 16 of 22  
Atty. Dkt.: 620-91

Figure 8a

ATAGAGAGGCGAGGTAGCTCGCGGATCATGAAGCGGGAGTACCAGGACGCCGG  
AGGGAGCGGCGGCGGCGGTGGCGGCATGGGCTCGTCCGAGGACAAGATGATGGT  
GTCGGCGGCGGCGGGGGAGGGGGAGGAGGTGGACGAGCTGCTGGCGGCGCTCG  
GGTACAAGGTGCGCGCCTCCGACATGGCGGACGTGGCGCAGAAGCTGGAGCAGC  
TCGAGATGGCCATGGGGATGGGCGGCGTGGGCGCCGGCGCCGCCCCGACGACA  
GCTTCGCCACCCACCTCGCCACGGACACCGTGCACATAACCCACCGACCTGTC  
GTCTTGGGTTCGAGAGCATGCTGTGCGAGCTCAACGCGCCGCCGCCGCCCTCCCG  
CCCGCCCCGAGCTCAACGCCTCCACCTCCTCCACCGTCACGGGCAGCGGCGGCT  
ACTTCGATCTCCCGCCCTCCGTGCACTCCTCCAGCAGCATCTACGCGCTGCGGCC  
GATCCCTCCCGGCGCGCGACGGCGCCGGCCGACCTGTCCGCCGACTCCGTG  
CGGGATCCCAAGCGGATGCGCACTGGCGGGAGCAGCACCTCGTCGTATCCTCCT  
CCTCGTCGTCTCTCGGTGGGGGCGCCAGGAGCTCTGTGGTGGAGGCTGCCCGCC  
GGTCGCGGCCGCGGCCAACGCGACGCCCGCGCTGCCGGTCGTGCTGGTCGACAC  
GCAGGAGGCCGGGATTCGGCTGGTGCACGCGCTGCTGGCGTGCGCGGAGGCCGT  
GCAGCAGGAGAACCTCTCCGCCGCGGAGGCGCTGGTGAAGCAGATACCCTTGCT  
GGCCGCGTCCCAGGGCGGCGCGATGCGCAAGGTGCGCCGCTACTTCGGCGAGGC  
CCTCGCCCGCCGCGTCTTCCGCTTCCGCCCGCAGCCGGACAGCTCCCTCCTCGAC  
GCCGCCTTCGCCGACCTCCTCCACGCGCACTTCTACGAGTCTGCCCTACCTCAA  
GTTTCGCGCACTTCACCGCCAACAGGCCATCCTGGAGGCGTTCGCCGGCTGCCGC  
CGCGTGCACGTGCTCGACTTCGGCATCAAGCAGGGGATGCAGTGGCCCCGCACTTC  
TCCAGGCCCTCGCCCTCCGTCCCGGCGGCCCTCCCTCGTTCGCGCTCACCGGCGTC  
GGCCCCCGCAGCCGGACGAGACCGACGCCCTGCAGCAGGTGGGCTGGAAGCTC  
GCCAGTTCGCGCACACCATCCGCGTGCACCTCCAGTACCGCGGCCCTCGTCGCCG  
CCACGCTCGCGGACCTGGAGCCGTTTCATGCTGCAGCCGGAGGGCGAGGAAGACC  
CGAACGAGGAGCCCGAGGTAATCGCCGTCAACTCAGTCTTCGAGATGCACCGGC  
TGCTCGCGCAGCCCGGCGCCCTGGAGAAGGTCTTGGGCACCGTGCGCGCCGTGC  
GGCCCAGGATCGTCAACGTGGTGGAGCAGGAGGCGAATCACAACCTCCGGCACAT  
TCCTGGACCGCTTCACCGAGTCTCTGCACTACTACTCCACCATGTTTCGATTCCCTC  
GAGGGCGGCAGCTCCGGCGGCGGCCCATCCGAAGTCTCATCGGGGGCTGCTGCT  
GCTCCTGCCGCCCGCGGCACGGACAGGTTCATGTCCGAGGTGTACCTCGGCCGGC  
AGATCTGCAACGTGGTGGCCTGCGAGGGGGCGGAGCGCACAGAGCGCCACGAGA  
CGTGGGCCAGTGGCGGAACCGGCTGGGCAACGCCGGGTTCGAGACCGTCCACC  
TGGGCTCCAATGCCTACAAGCAGGCGAGCACGCTGCTGGCGCTCTTCGCCGGCGG  
CGACGGCTACAAGGTGGAGGAGAAGGAAGGCTGCCTGACGCTGGGGTGGCACAC  
GCGCCCGCTGATCGCCACCTCGGCATGGCGCCTGGCCGGGCGCTGATCTCGCGAG  
TTTTGAACGCTGTAAGTACACATCGTGAGCATGGAGGACAACACAGCCCCGGCG  
GCCGCCCGGCTCTCCGGCGAACGCACGCACGCACGCACTTGAAGAAGAAGAAG  
CTAAATGTCATGTGAGTGCAGTGAATTGCAGCGACCGGCTACGATCGATCGGG  
CTACGGGTGGTTCCTCGTCTGGCGTGAAGAGGTGGATGGACGACGAACCTCCG

Figure 8b

MKREYQDAGSGGGGGGMGSSEDKMMVSAAGEGEEVDELLAALGYKVRASDM  
ADVAQKLEQLEMAMGMGGVGAGAAPDDSFATHLATDTVHYNPTDLSSWVESMLS  
ELNAPPPPLPPAPQLNASTSSTVTGSGGYFDLPPSVDSSSSIYALRPIPSGATAPADL  
SADSVRDPKRMRTGGSSTSSSSSSSSSLGGGARSSVVEAAPPVAAAANATPALPVV  
VDTQEAGIRLVHALLACAEAVQQENLSAAEALVKQIPLLAASQGGAMRKVAA YFGE  
ALARRVFRFRPQPDSSLLDAAFADLLHAHFYESCPYLKFAHFTANQAILEAFAGCRR  
VHVVDVFGIKQGMQWPALLQALALRPGPPSFRLTGVGPPQPDDETALQQVGWKL  
QFAHTIRVDFQYRGLVAATLADLEPFMLQPEGEEDPNEEPEVIAVNSVFEMHRLLAQ  
PGALEKVLGTVRAVRPRIVTVVEQEANHNSGTFLDRFTESLHYYSTMFDSLEGGSSG  
GGPSEVSSGAAAAPAAAGTDQVMSEVYLGRQICNVVACEGAERTERHETLGQWRN  
RLGNAGFETVHLGSNAYKQASTLLALFAGGDGYKVEEKEGCLTLGWHTRPLIATSA  
WRLAGP





Inventor: HARBERD et al  
SN 09/485,529/Sheet 17 of 22  
Atty. Dkt.: 620-91

Figure 9a

TTTCGCCTGCCGCTGCTATTAATAATTGCCTTCTTGTTTCCCCGTTTTTCGCCCCAG  
CCGCTTCCCCCCTCCCCTACCTTTCTTCCCCACTCGCACTTCCCAACCCTGGAT  
CCAAATCCCAAGCTATCCCAGAACCGAAACCGAGGCGCGCAAGCCATTATTAGC  
TGGCTAGCTAGGCCTGTAGCTCCGAAATCATGAAGCGCGAGTACCAAGACGCCG  
GCGGGAGTGGCGGCGACATGGGCTCCTCCAAGGACAAGATGATGGCGGCGGCGG  
CGGGAGCAGGGGAACAGGAGGAGGAGGACGTGGATGAGCTGCTGGCCGCGCTC  
GGGTACAAGGTGCGTTTCGTCGGATATGGCGGACGTGCGCGCAGAAGCTGGAGCAG  
CTCGAGATGGCCATGGGGATGGGCGGCGTGGGCGGCGCCGGCGCTACCGCTGAT  
GACGGGTTCGTGTCGCACCTCGCCACGGACACCGTGCCTACAATCCCTCCGACC  
TGTCGTCTTGGGTGAGAGCATGCTGTCCGAGCTCAACGCGCCCCCAGCGCCGCT  
CCCGCCCGCGACGCCGGCCCCAAGGCTCGCGTCCACATCGTCCACCGTCAACAAGT  
GGCGCCGCCGCCGGTGTGCTACTTCGATCTCCCGCCCGCCGTGGACTCGTCCA  
GCAGTACCTACGCTCTGAAGCCGATCCCCTCGCCGGTGGCGGCGCCGTCCGCCGA  
CCCGTCCACGGA CTGGCGCGGGAGCCCAAGCGGATGAGGACTGGCGGCGGCAG  
CACGTCGTCTCTCTTCTCGTCGTATCCATGGATGGCGGTGCGACTAGGAGCT  
CCGTGGTTCGAAGCTGCGCCGCCGGCGACGCAAGCATCCGCGGCGGCCAACGGGC  
CCGCGGTGCCGGTGGTGGTGGTGGACACGCAGGAGGCCGGGATCCGGCTCGTGC  
ACGCGCTGCTGGCGTGC GCGGAGGCCGTGCAGCAGGAGAACTTCTCTGCGGCGG  
AGGCGCTGGTCAAGCAGATCCCCATGCTGGCCTCGTCGAGGGCGGTGCCATGC  
GCAAGGTCGCCGCCTACTTCGGCGAGGCGCTTGCCCGCCGCGTGTATCGCTTCCG  
CCCGCCACCGGACAGCTCCCTCCTCGACGCCGCCTTCGCCGACCTCTTGACGCG  
CACTTCTACGAGTCCTGCCCTACCTGAAGTTGCCCCACTTCACCGCGAACCAGG  
CCATCCTCGAGGCCTTCGCCGGCTGCCGCCGCGTCCACGTCGTCGACTTCGGCAT  
CAAGCAGGGGATGCAGTGGCCGGCTCTTCTCCAGGCCCTCGCCCTCCGCCCTGGC  
GGCCCCCGTTCGTTCCGGCTCACCGGCGTCCGGGCCGCGCAGCCCGACGAGACC  
GACGCCTTGACAGCAGGTGGGCTGGAACTTGCCCAAGTTCGCGCACACCATCCGCG  
TGGACTTCCAGTACCGTGGCCTCGTCGCGGCCACGCTCGCCGACCTGGAGCCGTT  
CATGCTGCAACCGGAGGGCGATGACACGGATGACGAGCCCGAGGTGATCGCCGT  
GAACTCCGTGTTTCGAGCTGCACCGGCTTCTTGCGCAGCCCGGTGCCCTCGAGAAG  
GTCCTGGGCACGGTGC GCGCGGTGCGGCCGAGGATCGTGACCGTGGTTCGAGCAG  
GAGGCCAACCACAACCTCCGGCACGTTCTCGACCGCTTCACCGAGTCGCTGCACT  
ACTACTCCACCATGTTTCGATTCTCTCGAGGGCGCCGGCGCCGGCTCCGGCCAGTC  
CACCGACGCCTCCCCGGCCGCGGCCGGCGGCACGGACCAGGTCATGTGCGAGGT  
GTACCTCGGCCGGCAGATCTGCAACGTGGTGGCGTGCAGAGGGCGCGGAGCGCAC  
GGAGCGCCACGAGACGCTGGGCCAGTGGCGCAGCCGCCTCGGCGGCTCCGGGTT  
CGCGCCCGTGCACCTGGGCTCCAATGCCTACAAGCAGGCGAGCACGCTGCTGGC  
GCTCTTCGCCGGCGGGCGACGGGTACAGGGTGGAGGAGAAGGACGGGTGCCTGAC  
CCTGGGGTGGCATAACGCGCCCGCTCATCGCCACCTCGGCGTGGCGCGTCGCCGCC  
GCCGCCGCTCCGTGATCAGGGAGGGGTGGTTGGGGCTTCTGGACGCCGATCAAG  
GCACACGTACGTCCCCTGGCATGGCGCACCCCTCCCTCGAGCTCGCCGGCACGGGT  
GAAGCTACCCGGGGGATCCACTAATTCTAAAACGGCCCCACCGCGGTGGAATC  
CACCTTTTGTTCCTTTA



Inventor: HARBERD et al  
SN 09/485,529/Sheet 18 of 22  
Atty. Dkt.: 620-91

## Figure 9b

MKREYQDAGGSGGDMGSSKDKMMAAAAGAGEQEEEDVDELLAALGYKVRSSDM  
ADVAQKLEQLEMAMGMGGVGGAGATADDGFVSHLATDTVHYNPSDLSSWVESML  
SELNAPPAPLPPATPAPRLASTSSTVTSGAAAGAGYFDLPPAVDSSSSTYALKPIPSV  
AAPSADPSTDSAREPKRMRTGGGSTSSSSSSSSSSMDGGRTRSSVVEAAPPATQASAAA  
NGPAVPVVVVDTQEAGIRLVHALLACAEAVQQENFSAAEALVKQIPMLASSQGGAM  
RKVAAYFGEALARRVYRFRPPPDSSLLDAAFADLLHAHFYESCPYLKFAHFTANQAI  
LEAFAGCRRVHVVDGFIKQGMQWPALLQALALRPGGPPSFRLTGVGPPQPDETDAL  
QQVGWKLQFAHTIRVDFQYRGLVAATLADLEPFMLQPEGDDTDDEPEVIAVNSVF  
ELHRLLAQPGALEKVLGTVRAVRPRIVTVVEQEANHNSGTFLDRFTESLHYYSTMFD  
SLEGAGAGSGQSTDASPAAAGGTDQVMSEVYLGRQICNVVACEGAERTERHETLGQ  
WRSRLGGSGFAPVHLGSNAYKQASTLLALFAGGDGYRVEEKDGCLTLGWHTRPLIA  
TSAWRVAAAAAP



Inventor: HARBERD et al  
SN 09/485,529/Sheet 19 of 22  
Atty. Dkt.: 620-91

|          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin | maiz-fin |
| rht-fina | rht-fina | rht-fina | rht-fina | rht-fina | rht-fina | rht-fina | rht-fina | rht-fina | rht-fina |
| rice-fin | rice-fin | rice-fin | rice-fin | rice-fin | rice-fin | rice-fin | rice-fin | rice-fin | rice-fin |
| gai      | gai      | gai      | gai      | gai      | gai      | gai      | gai      | gai      | gai      |
| 55       | 55       | 55       | 55       | 55       | 55       | 55       | 55       | 55       | 55       |
| 44       | 44       | 44       | 44       | 44       | 44       | 44       | 44       | 44       | 44       |
| 115      | 115      | 115      | 115      | 115      | 115      | 115      | 115      | 115      | 115      |
| 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      |
| 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      |
| 93       | 93       | 93       | 93       | 93       | 93       | 93       | 93       | 93       | 93       |
| 174      | 174      | 174      | 174      | 174      | 174      | 174      | 174      | 174      | 174      |
| 168      | 168      | 168      | 168      | 168      | 168      | 168      | 168      | 168      | 168      |
| 171      | 171      | 171      | 171      | 171      | 171      | 171      | 171      | 171      | 171      |
| 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      | 114      |
| 234      | 234      | 234      | 234      | 234      | 234      | 234      | 234      | 234      | 234      |
| 225      | 225      | 225      | 225      | 225      | 225      | 225      | 225      | 225      | 225      |
| 231      | 231      | 231      | 231      | 231      | 231      | 231      | 231      | 231      | 231      |
| 159      | 159      | 159      | 159      | 159      | 159      | 159      | 159      | 159      | 159      |
| 294      | 294      | 294      | 294      | 294      | 294      | 294      | 294      | 294      | 294      |
| 285      | 285      | 285      | 285      | 285      | 285      | 285      | 285      | 285      | 285      |
| 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      |
| 219      | 219      | 219      | 219      | 219      | 219      | 219      | 219      | 219      | 219      |
| 354      | 354      | 354      | 354      | 354      | 354      | 354      | 354      | 354      | 354      |
| 345      | 345      | 345      | 345      | 345      | 345      | 345      | 345      | 345      | 345      |
| 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      |
| 277      | 277      | 277      | 277      | 277      | 277      | 277      | 277      | 277      | 277      |
| 414      | 414      | 414      | 414      | 414      | 414      | 414      | 414      | 414      | 414      |
| 405      | 405      | 405      | 405      | 405      | 405      | 405      | 405      | 405      | 405      |
| 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      |
| 337      | 337      | 337      | 337      | 337      | 337      | 337      | 337      | 337      | 337      |
| 473      | 473      | 473      | 473      | 473      | 473      | 473      | 473      | 473      | 473      |
| 465      | 465      | 465      | 465      | 465      | 465      | 465      | 465      | 465      | 465      |
| 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      | 256      |
| 392      | 392      | 392      | 392      | 392      | 392      | 392      | 392      | 392      | 392      |

Figure 10a



Figure 10b

|          |            |             |             |               |              |                   |     |
|----------|------------|-------------|-------------|---------------|--------------|-------------------|-----|
| maiz-fin | RIVTVVEQEA | NHNSGTFLLDR | FTESLHYYST  | MFDSLEGAGA    | GSQSTDA SP   | A . . . . . AAGGT | 529 |
| rht-fina | RIVTVVEQEA | NHNSGTFLLDR | FTESLHYYST  | MFDSLEGSS     | GGGPSEVSSG   | AAAAPAAAGT        | 525 |
| rice-fin | . . . . .  | . . . . .   | . . . . .   | . . . . .     | . . . . .    | . . . . .         | 256 |
| gai      | EIFTVVEQES | NHNSPIFLDR  | FTESLHYYST  | LPDSLEGVPS    | GQ . . . . . | . . . . .         | 434 |
| maiz-fin | DQVMSEVYLG | RQICNVVACE  | GAERTERHET  | LGQWRSRLGG    | SGFAPVHLLGS  | NAYKQASTLL        | 589 |
| rht-fina | DQVMSEVYLG | RQICNVVACE  | GAERTERHET  | LGQWRNRLGN    | ACFETVHLLGS  | NAYKQASTLL        | 585 |
| rice-fin | . . . . .  | . . . . .   | . . . . .   | . . . . .     | . . . . .    | . . . . .         | 256 |
| gai      | DKVMSEVYLG | KQICNVVACD  | GPD RVERHET | LEQWRNRFGS    | AGFAAAHIGS   | NAFKQASMLL        | 494 |
| maiz-fin | ALFAGGEGYR | VEEKDGCCLTL | GWHTRPLIAT  | SAWRVAAA AA   | P            | 630               |     |
| rht-fina | ALFAGGEGYR | VEEKEGCCLTL | GWHTRPLIAT  | SAWRLAGP . .  | .            | 623               |     |
| rice-fin | . . . . .  | . . . . .   | . . . . .   | . . . . .     | .            | 256               |     |
| gai      | ALFNGGEGYR | VEESDGCCLML | GWHTRPLIAT  | SAWKLS TN . . | .            | 532               |     |



Inventor: HARBERD et al  
SN 09/485,529/Sheet 21 of 22  
Atty. Dkt.: 620-91

## Figure 11a

TACCAAGACGCCGGCGGGAGTGGCGGCGACATGGGCTCCTCCAAGGACAAGATG  
ATGGCGGCGGCGGCGGGAGCAGGGGAACAGGAGGAGGAGGACGTGGATGAGCT  
GCTGGCCGCGCTCGGGTACAAGGTGCGTTCGTTCGGATATGGCGGGGCTGGAGCA  
GCTCGAGATGGCCATGGGGATGGGCGGCGTGGGCGGCGCCGGCGCTACCGCTGA  
TGACGGGTTCGTGTCGCACCTCGCCACGGACACCGTGCACTACAATCCCTCCGAC  
CTGTCGTCTGGGTTCGAGAGCATGCTGTCCGA

## Figure 11b

YQDAGGSGGDMGSSKDKMMAAAAGAGEQEEEDVDELLAALGYKVRSSDMAGLEQ  
LEMAMGMGGVGGAGATADDGFVSHLATDTVHYNPSDLSSWVESMLS

## Figure 11c

TCCTCCAAGGACAAGATGATGGCGGCGGCGGCGGGAGCAGGGGAACAGGAGGA  
GGAGGACGTGGATGAGCTGCTGGCCGCGCTCGGGTACAAGGTGCGTTCGTTCGGA  
TATGGCGGACGTTCGCGCAGAAGCTGGAGCAGCTCGAGATGGCCATGGGGATGGG  
CGGCGTGGGCGGCGCCGGCGCTACCGCTGATGACGGGTTCGTGTCGCACCTGTCG  
TCCTGGGTTCGAGAGCATGCTGTCCGAGCTCAACGCGCCCCCAGCGCCGCTCCCGC  
CCGCGACGCCGGCCCCAAGGCTCGCGTCCACATCGTCCACCGTCACAAGTGGCGC  
CGCCGCCGGTGCTGGCTACTTCGATCTCCCGCCCCGCCGTGGACTC

## Figure 11d

SSKDKMMAAAAGAGEQEEEDVDELLAALGYKVRSSDMADVAQKLEQLEMAMGM  
GGVGGAGATADDGFVSHLSSWVESMLSELNAPPAPLPATPAPRLASTSSTVTSGAA  
AGAGYFDLPPAVD



Inventor: HARBERD et al  
SN 09/485,529/Sheet 22 of 22  
Atty. Dkt.: 620-91

## Figure 12a

GCGGCGCTCGGGTACAAGGTGCGCGCCTCCGACATGGCGGACGTGGCGCAGAAG  
CTGGAGCAGCTCGAGATGGCCATGGGGATGGGCGGCGTGGGCGCCGGCGCCGCC  
CCCGACGACAGCTTCGCCACCCACCTCGCCACGGACACCGTGCACTACAACCCCA  
CCGACCTGTCGTCTTGGGTGCGAGAGCATGCTGTGCGGAGCTCAACGCCTCCACCTC  
CTCCACCGTCACGGGCAGCGGCGGCTACTTCGATCTCCCGCCCTCCGTCGACTCC  
TCCAGCAGCATCTACGCGCTGCGGCCGATCCCCTCCCCGGCCGGCGCGACGGCGC  
CGGCCGACCTGTCCGCCGACTCCGTGCGGGATCCCAAGCGGATGCGCACTGGCG  
GGAGCAGCACCTCGTCGTCATCCTCCTCCTCGTC

## Figure 12b

AALGYKVRASDMADVAQKLEQLEMAMGMGGVGAGAAPDDSFATHLATDTVHYN  
PTDLSSWVESMLSELNASTSSTVTGSGGYFDLPPSVDSSSSIYALRPIPSAGATAPAD  
LSADSVRDPKRMRTGGSSTSSSSSSS